TABLE II

SHOWING THE RESULT IN THE F_2 GENERATION OF CROSSING SCARLET ♂ × WILD ♀

No.	Scarlet ♂♂	Scarlet ♀♀	Black ♂♂	Black ♀♀	Total ♂♂	Total ♀♀	Total Scarlet	Total Black
8	34	37	111	118	145	155	71	229
9	31	56	134	165	165	221	87	299
10	38	46	121	137	159	183	84	258
11	—	—	—	—	—	—	102	300
12	69	91	216	257	285	348	160	473
13	22	19	39	61	61	80	41	141
14	—	—	—	—	—	—	80	264
15	—	—	—	—	—	—	74	230
Total	194	249	621	738	815	987	699	2,194

expected ratio of three to one. There appeared in the F_2 generation from the scarlet male a total of 699 scarlets and 2,194 blacks,—a ratio of 3.14 black to one scarlet. From the scarlet female there appeared in the F_2 generation 788 scarlets and 2,333 blacks,—a ratio of 2.96 black to one scarlet. It is to be noted that the sex ratio is practically one of equality.

ROSCOE R. HYDE

A WING MUTATION IN A NEW SPECIES OF DROSOPHILA

A NEW wing mutation which appeared in my cultures of *Drosophila confusa* Auct. (not Staeg.) is characterized by the fact that the wings curve upward at an angle of about 45 degrees from the region of the tip of the abdomen. The new wing resembles somewhat the shape of a petal of the rose and is easily distinguished from the wild species since the wings of the wild fly project horizontally over and beyond the abdomen, as is characteristic of the diptera. I shall refer to the new fly as jaunty C.[1]

The wild stock from which jaunty C arose was taken in an orchard on the Coss farm about seven miles south of North Manchester, Indiana, in September, 1913. The original stock was bred in a glass vial to which fresh banana was added from time to time. Several stock bottles were made up from this

[1] The wing is like that of jaunty in *D. ampelophila* and is here designated jaunty C(= *confusa*) to call attention to this resemblance.

bottle. All the offspring were examined with a hand lens but no unusual forms appeared until the fourth or fifth generation when jaunty C was discovered. Subsequently three or four similar mutants were found in the cultures, which would seem to indicate that they arose from heterozygous stock. Pure stock was obtained by crossing to the wild flies and "extracting."

When jaunty C is crossed to the wild type all of the flies of the F_1 generation have long wings. No exact record was kept but this statement is true of several hundred that were observed. The sex ratio was practically one of equality. In the F_2 generation jaunty C reappeared, as shown in the following tables.

F_2 GENERATION FROM JAUNTY C ♂

TABLE I

No.	Jaunty C	Long
1	40	176
2	38	150
Total...	78	326

F_2 GENERATION FROM JAUNTY C ♀

TABLE II

No.	Jaunty C	Long
3	37	124
4	24	145
5	66	308
	127	577

Among the grandchildren from the jaunty C male the ratio is one jaunty C to 4.18 long, while among the grandchildren of the reciprocal cross the ratio is one jaunty C to 4.54 long. The sex ratios were near equality.

These ratios do not conform very closely to Mendelian expectations, but I have found this species very hard to breed, and since the flies were bred in mass cultures it may be that jaunty C was unfavorably affected by crowding of the larvæ.

I had hoped to carry out more elaborate experiments during the summer of 1914 and had about twenty bottles of the new stock in pure culture and also some wild stocks, when the flies commenced to die during the hot days in the latter part of May and June. Finally the last individual disappeared despite all the care that I could exercise, and no larvæ were left in the bottles to take their place. As the June temperature increased other stocks failed to reproduce and died out. That the warm weather was in all probability responsible is shown by the results which were obtained by placing the stocks in a refrigerator. All those stocks placed in the refrigerator remained very active and continued to reproduce while all the stocks left on the outside died out with the exception of the wild stocks of *D. ampelophila.*

But even *ampelophila* does not thrive when the temperature reaches 100°.

During September, 1914, I took several wild stocks of *confusa* from the same region, and have examined many of the offspring with the hopes of again finding this form but so far no unusual forms have appeared.

ROSCOE R. HYDE

MUTATIONS IN TWO SPECIES OF DROSOPHILA

IN our cultures of *Drosophila,* mutations have appeared recently in two species other than *Drosophila ampelophila.* Both mutants are characterized by abnormalities in wing venation. One of them has irregular extra veins in the axillary cell, and hence may be called *axillary.* The other is distinguished most clearly by the fusion of the distal end of the second vein to the costa, producing a double vein for a considerable distance, for which reason it is called *confluent.* In each of these cases other abnormal characters are associated with those mentioned, but they are relatively inconspicuous.

The mutant called axillary arose in normal stock of *D. tripunctata* Loew, which has been bred in the laboratory for about six generations. This stock was kept in milk bottles and fed on banana, but received no artificial treatment except anesthesia with ether once per generation. Axillary behaves as a simple Mendelian recessive when crossed with normal, and breeds true in pure cultures.

The mutant called confluent appeared in a culture of an undescribed species of *Drosophila,* referred to as "species B" by one of us in a paper describing its chromosomes.[1] Confluent is a dominant character (*i. e.,* it appears in the heterozygous fly), and so far as we have been able to ascertain it never occurs in the homozygous condition. At least no flies homozygous for it have as yet been found, although numerous matings have been made which should have produced them. The original fly showing the confluent character (a male) appeared in a stock culture, all of his brothers and sisters being normal. He was heterozygous, as shown by matings with normal females, which gave 15 normal and 13 confluent offspring. Seven of the latter, bred

[1] "Chromosome Studies in the Diptera," I, *Jour. Exp. Zool.,* XVII. p. 45, 1914.